

UTAH STATE IMPLEMENTATION PLAN

SECTION XVII

VISIBILITY PROTECTION

Adopted by the Utah Air Quality Board  
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#### VISIBILITY PROTECTION

##### XVII.A. INTRODUCTION

Utah has spectacular natural features which are enjoyed by Utahns and which draw visitors from across the nation and around the world. Visibility associated with these features is important and deserves protection.

Section 19-2-101, Utah Code Annotated 1953, as Amended, identifies the policies of the State of Utah regarding air pollution. One of the policies established is "to facilitate the enjoyment of the natural attractions of the State".

Five National Parks in Utah have been identified in accordance with Section 162 of the Clean Air Act as mandatory Class I Areas for the Prevention of Significant Deterioration of Air Quality. No other Class I Areas currently exist in the State. Section 169A of the Clean Air Act requires that visibility protection be afforded all mandatory Class I Areas. The mandatory Class I Areas are: Arches, Bryce Canyon, Canyonlands, Capital Reef, and Zion National Parks. Visibility protection consistent with the Clean Air Act will be afforded within the park boundaries.

This SIP will be reviewed no less frequently than every three years and revised as determined necessary. A periodic report will be developed as part of the review and will contain the information identified in Section XVII.I of this plan.

##### XVII.B. BACKGROUND

In December 1980, EPA promulgated visibility protection requirements under authority of Section 169A, Clean Air Act. On January 7, 1981 the Governor identified the Executive Secretary of the Utah Air Conservation Committee (UACC) as the contact person for coordination of visibility issues and actions with the Federal Land Managers.

The UACC began development of a State Implementation Plan (SIP) revision for protection of visibility in response to the EPA promulgation. Four scoping meetings were held throughout the state prior to drafting the SIP. With input from these meetings, a draft SIP was developed which was considered for adoption for public hearing by the UACC in the spring of 1981. The UACC tabled the draft SIP because of pending litigation against EPA by the Environmental Defense Fund with regard to the EPA

visibility regulations. Because of the potential impact of the integral vista portion of the EPA regulations (CFR 51.301(n)), the UACC chose to wait until the suit was settled before enacting state rules.

In April 1984, the suit was adjudicated and the EPA was required by the court to disapprove all state plans that did not conform to the December 1980 regulations. The court established a schedule for the development of SIP revisions to comply with the requirements of Section 169A. The court settlement divided visibility protection into two phases. Phase 1 was to address new source review and visibility monitoring. Phase 2 was to address existing visibility impacts caused by existing sources, integral vistas, and a long term plan for visibility improvement. Subsequent to the court settlement the UACC held additional scoping meetings in November, 1984 concerning visibility monitoring and new source reviews for visibility impacts. In addition, the UACC held consultation meetings with the Federal Land Managers prior to the scoping meetings. As part of the scoping meetings, information was also requested concerning the preparation of a SIP for the remaining visibility issues identified in Section 169A. This SIP has been developed taking into consideration the input from the scoping meetings and in conformance with the EPA visibility proposal contained in the Federal Registers dated October 23, 1984, and March 12, 1987.

After the completion of the SIP which addressed the phase 1 requirements for new source review and monitoring, the UACC began development of the phase 2 SIP. In March, 1986 additional scoping meetings were held in preparation for development of the SIP. On September 8, 1986 EPA announced that the court settlement had been modified and the timetable for submittal of the phase 2 SIP had been changed to August 31, 1987.

#### XVII.C. VISIBILITY PROTECTION

Visibility, the ability to see through the atmosphere, is a simple concept but its evaluation involves a complex set of parameters. In addition to the distance one can see, the clarity, color, and detail of the visible features are also important. Current research is identifying some of these parameters; however, many technical questions still remain and much additional information is needed. As additional information becomes available, the procedures for visibility protection contained in the plan will be refined.

The question of visibility protection has been addressed using a two phased approach. The first phase was to implement a visibility monitoring strategy and to consider direct plume impacts on visibility from proposed new sources or major modifications to existing sources.

The second phase has addressed the development of a long term plan to show progress toward the national goal established by Congress in the Clean Air Act for

visibility protection which is "the prevention of any future, and the remedying of any existing impairment of visibility in mandatory Class I Areas which impairment results from man made air pollution". The committee has also addressed plume impacts from existing sources.

The State of Utah recognizes the value of the mandatory Class I Areas and is committed to protecting the visibility resource within the boundary of each Class I Area from visibility impairment which would not have existed under natural conditions.

#### XVII.D. VISIBILITY MONITORING

The State visibility monitoring plan consists of three components as follows: 1. monitoring by the Federal Land Manager; 2. monitoring by sources proposing to locate or modify in an area where emissions may impact mandatory Class I Areas; and 3. implementation of a State monitoring network.

Any new major source or major modification of an existing source which is predicted, by the review referred to in Section XVII.E of this SIP, to impact visibility in a Class I Area, may be required, as a condition precedent to construction, installation or modification, and as determined necessary by the Executive Secretary to perform pre-construction visibility monitoring. A visibility monitoring plan will need to be submitted to the Executive Secretary for approval prior to the initiation of data collection.

In addition, the UACC may require sources to conduct additional post-construction visibility monitoring in mandatory Class I Areas to determine actual source impacts.

Visibility data provided by the Federal Land Managers, which is determined appropriate by the Executive Secretary, will be considered as part of the review and permitting process. The determination of appropriateness will be based on the quality of the data, the length of the data record, and the applicability of the data. Existing data available from the Federal Land Managers will be used in assessing visibility background and trends.

The goal for visibility monitoring is to determine background visibility conditions of both naturally occurring visibility impairment and any existing visibility impairment caused by existing sources and to develop a data base that will be sufficient for use in determining the potential effects that a major new source or major modification may have on visibility in a mandatory Class I Area. The following are appropriate for use as part of a visibility monitoring network: 1. photographic camera; 2. EPA reference particulate matter samplers; 3. teloradiometers; 4. nephelometers; 5. human observation; 6. other appropriate technology approved by the Executive Secretary.

A monitoring plan is required to be prepared by each source or agency proposing to perform visibility monitoring. The plan must describe the specific objective of the

monitoring program and the monitoring methods and instruments of data collection, monitoring locations, frequencies, monitoring schedule and quality assurance procedures that will be used. The monitoring plan must be approved by the Executive Secretary before monitoring begins.

The Executive Secretary may require audits of any visibility monitoring required under this SIP.

It is the desire of the UACC to cooperate with and obtain visibility data from National Park Service visibility monitoring sites and to this end a Memorandum of Understanding between the State and the National Park Service has been signed to facilitate visibility monitoring and data exchange.

Currently, National Park Service visibility monitoring sites are located in the following parks; 1. Bryce Canyon National Park; 2. Arches National Park; 3. Capitol Reef National Park; and 4. Canyonlands National Park. Visibility data have been collected in all five National Parks.

It is the desire of the UACC to establish a state operated visibility monitoring network to complement the monitoring required by the SIP and to provide additional baseline data. Contingent upon obtaining necessary funding, the Bureau of Air Quality will begin installation of a continuous visibility monitoring network by September, 1989. In the interim, visual monitoring and photographic techniques will be used as determined necessary and appropriate by the UACC.

#### XVII.E. NEW OR MODIFIED SOURCE ANALYSIS OF VISIBILITY IMPACT

A new major source proposing to locate in either an attainment area or non-attainment area or a major modification to an existing source will be required to analyze the impact on visibility that the new major source or major modification is predicted to have within the boundaries of the mandatory Class I area. This analysis will be required as a part of the Notice of Intent to construct and approval order procedure identified in Section II of this implementation plan. Examination of the visibility impact analysis will be made according to current new source review procedures until such time as the EPA establishes impact criteria for visibility. The impact analysis will follow the procedures identified in the publication "Workbook For Estimating Visibility Impacts" (EPA 450-4-80-031) November, 1980 or an equivalent method approved by the Executive Secretary.

Source specific reviews will be performed to determine the potential visibility impact of emissions from new major sources and proposed major modifications to existing sources consistent with the applicable procedural requirements of 40 CFR, 52.27 and 52.28. Control requirements to assure appropriate mitigation of predicted adverse visibility impacts will be determined as a result of this review. Items which will be taken into consideration in determining control requirements are: a) costs to be borne by sources to provide visibility protection; b) time necessary for sources to

achieve visibility improvement; c) energy usage and conservation; d) non-air quality environmental impacts of visibility protection; e) the useful life of the source; and f) the degree of visibility improvement which will be provided as a result of control.

The Executive Secretary shall consider, as a part of the new major source or major modified source review, any analysis performed by the Federal Land Manager which indicates that such proposed new major source or major modification may have an adverse impact on visibility in any mandatory Class I area provided such analysis is submitted to the Executive Secretary within 60 days of the notification to the Federal Land Manager.

The State will insure that source emissions will be consistent with making reasonable progress toward the national visibility goal referred to earlier in this document.

#### XVII.F. EXISTING SOURCE VISIBILITY IMPACT AND BART

The National Park Service (NPS) has made the determination that all National Parks in the Nation and in Utah are being impacted by the activities of man in the form of uniform haze. In addition the NPS has submitted photographic documentation of visibility impairment within Canyonlands National Park which may be attributed to a specific source. The impairment which may be reasonably attributable to a single source is believed to occur only during the winter. Summertime impairment is believed to be caused by the transport of urban air masses or regional haze. The information presently available is not sufficient to conclude that impairment is being caused by any specific source. Studies are presently being conducted which should better characterize the impairment and may allow the identification of the source or sources which may be causing impairment which is in addition to that which would have existed under natural conditions. Because of this lack of conclusive information, a Best Available Retrofit Technology (BART) review is being deferred until additional information is available which will show reasonably attributable impairment within Canyonlands National Park which results from a specific source. As part of the BART process, the National Park Service may certify impairment to the Executive Secretary at any time. The Executive Secretary will address in the plan impairment which is certified six months prior to a revision of this plan. The Executive Secretary will identify each existing stationary source which may reasonably attribute to the impairment. The adjusted timetable of the court settlement requires that a decision be made by August 31, 1988 on the need for BART reviews and the subsequent inclusion of those BART reviews into the SIP. In performing a BART analysis, any resulting emission limit will be based on the degree of reduction achievable through the application of the best technology available, the costs of compliance, the energy and non-air quality environmental impacts of compliance, any pollution control equipment in use or in existence at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology. Any source of air pollution required to implement BART controls may

request an exemption from the BART requirement from the Administrator of EPA. The request for exemption must include all available documentation relevant to the impact of the source's emissions on any mandatory Class I Area. The request must also provide a demonstration by the existing source that it does not or will not, by itself or in combination with other sources, emit any air pollutant which may be reasonably anticipated to cause or contribute to visibility impairment in any mandatory Class I Area. The request for exemption must also have the concurrence of the Executive Secretary. The source must also notify the National Park Service of its request for exemption.

#### XVII.G. REGIONAL HAZE

Regional haze is the most serious problem presently affecting visibility in and around the National Parks in Utah. Regional haze appears to be a complex mixture of diffuse pollutants of both industrial and urban origin, which is composed predominantly of sulfate and nitrate compounds which cause a visibility decrease over wide geographical regions. Very little of the air pollution contributing to regional haze is generated in Utah; most of it comes across our borders from the states to the south, southwest and southeast and from Mexico. The fact that many of the mandatory Class I Areas in our neighboring states are also being impacted by regional haze should provide additional impetus to develop interstate agreements which would have as their goal the reduction of the total atmospheric loading of sulfur and nitrogen compounds and in this manner reduce visual impairment in Utah. It may be necessary to request the assistance of EPA at the regional and national level in developing interstate agreements. The objective of interstate agreements should be the establishment of stringent emission limitations for new sources, reductions in emissions from existing sources, and reductions in urban and area emissions which would result in a reduction in the total atmospheric pollutant load.

Studies are currently being conducted which are increasing our knowledge about the source, formation and transport of regional haze resulting from human activities. As more information becomes available to use in decision making and when EPA promulgates guidelines, the SIP will be revised to deal with the issue of regional haze.

#### XVII.H. LONG TERM PLAN TO SHOW PROGRESS TOWARD IMPROVED VISIBILITY

The following Long Term plan should provide, to the greatest extent possible, for visibility protection for the five mandatory Class I Areas in Utah. The plan will also provide reasonable progress towards the national goal for visibility. This plan will help remedy any existing impairment certified by the Federal Land Manager responsible for a mandatory Class I Area. This plan will also prevent future visibility impairment in the mandatory Class I Areas.

1. Emission reductions due to ongoing Air Pollution Control Programs:

- a) New source review for major new or major modification to existing sources. All new major sources and major modifications of existing sources of air pollution will be reviewed to mitigate visibility impacts. This review will prevent future visibility impairment in mandatory Class I Areas by major sources of air pollution.
  - b) Best Available Control Technology (BACT). All sources locating in the State must apply BACT. This will result in removal of air pollutants which may impact visibility.
- 2. Additional Emission limitations and schedules for compliance: A PM10 SIP is required by EPA by November 15, 1991. Emission limitations established as part of a PM10 SIP may have a beneficial impact on visibility. Particles 10 microns and smaller in size range have the greatest detrimental impact on visibility.
  - 3. Measures to mitigate the impacts of construction, reconstruction and operation activities: Section 4.5 of the UACR presently require the control of dust associated with construction, reconstruction and operation activities. Where dust may be causing a visibility impact, the impact will be reduced as the dust is controlled.
  - 4. Source retirement and replacement schedule: As required by a BART review and as visibility impairment is identified by the FLM responsible for a mandatory Class I Area and as reasonably attributable impairment by a source is shown, normal retirement schedules will be looked at as part of the required BART analysis. The decision to apply BART or retire the source will be made by the source. Replacement of older impacting sources by newer less polluting sources will reduce the pollutant load and will result in improvement in visibility.
  - 5. Smoke management/Prescribed fire: The State will negotiate with Land Managers of public lands to include, as a part of the fire prescription, a review for visibility impact that may be caused by smoke in a mandatory Class I Area. The review should contain a procedure for scheduling of prescribed fire so that the impact on visibility is minimized. Where there may be an existing impact on visibility caused by prescribed fires, that impact will be reduced as a result of the inclusion of a visibility review as part of the fire prescription.
  - 6. Enforceability of emission limitations and control measures: All major sources and most minor sources are issued approval orders which contain enforceable emission limits. Enforcement of existing emission limitations will insure pollutant concentrations will at least be maintained at or below existing pollutant concentrations presently required. This will maintain



existing levels of visibility.

7. Interstate Agreements: The State will seek federal assistance in developing agreements with other states and will encourage international agreements which will require a reduction in the total atmospheric pollutant load. If interstate agreements are implemented which reduce the total atmospheric pollutant load from states which are south, southwest and southeast of Utah, the transportation of visibility impacting pollutants into Utah will be reduced and, therefore, visibility will be improved.
8. Develop a visibility standard: An analysis of alternative standards for visibility protection and the impacts of those alternatives will be completed by 1991. Establishing a visibility standard will provide a reference point to rate existing visibility against. It will also allow the evaluation of air masses coming into the State.
9. Develop an ambient sulfate standard: An analysis of alternative standards for sulfate particulate matter and the impacts of those alternatives will be completed by 1991. Establishing an ambient sulfate standard could cause a reduction of ambient sulfate concentrations which would result in an improvement in visibility.
10. There will be consultation between the State, County, and Local Governments and the Federal Land Managers on the review and implementation of the Utah visibility protection program.

#### XVII.I. VISIBILITY PROGRESS REPORT

In association with the periodic review of this portion of the SIP, a report will be developed in consultation with the National Park Service which will contain the following information: 1. progress achieved in remedying existing impairment; 2. the ability of the long-term strategy to achieve reasonable progress toward the national goal; 3. any change in visibility conditions since the last report; 4. additional measures that may be necessary to achieve progress toward the national goal; 5. the progress achieved in implementing BART and meeting other schedules laid out in the long-term strategy; and 6. the impact of any BART exemption.

#### XVII.J. POLICY OF THE AIR CONSERVATION COMMITTEE CONCERNING THE PROTECTION OF SCENIC VIEWS ASSOCIATED WITH MANDATORY CLASS I AREAS FROM SIGNIFICANT IMPAIRMENT FOR VISIBILITY.

The Utah Air Quality Board originally incorporated this section into the Rules, it has now become part of the SIP.

As part of the requirements under authority of Section 169A of the Clean Air Act

of 1977, states were to develop a plan for visibility protection for scenic views from within mandatory Class I Areas of panoramas and key features which were important to the visitor's experience in the mandatory Class I Area. Such scenic views were called integral vistas. Federal land managers had until December 31, 1985 to identify integral vistas. In October 1985 Secretary of Interior, Donald P. Hodel, announced that the Department of Interior would not designate integral vistas but would allow protection of those areas to be a state decision.

In response to that announcement Governor Norman H. Bangerter appointed a Citizens' Advisory Committee on visibility to study the question of air quality protection in areas outside national park boundaries. The Advisory Committee was to determine if protection of such areas was deemed important to the park visitor's experience. The Governor specifically asked the advisory committee to make recommendations concerning: (1) the appropriateness of visibility protection; (2) the areas which should be protected; (3) the appropriate degree of protection that should be provided. The advisory committee met the charge given by Governor Bangerter and provided a recommendation of visibility protection to the ACC. That recommendation has been reviewed, discussed and accepted by the ACC and is and is adopted by reference into this policy.

The Air Conservation Committee's policy statement for the protection of visibility is as follows: The State recognizes that visibility and the ability to see the great scenic views in Southern Utah is a rare and unique treasure and should be preserved, both for the benefit and pleasure of Utah residents, and to support our large tourist industry. In addition to the distance one can see, the clarity, color, and detail of the visible features are also important.

The Committee recommends that the Governor of Utah seek the cooperation of the Western Governors' Association to establish a task force on regional haze. The task force should be composed of state air program directors and would provide a recommendation to the Governor on the management of regional haze. The task force would be expected to hold hearings, create work groups, involve local area governments and federal agencies (EPA and National Park Service) in developing information and formulating recommendations. Based on the recommendations of the task force, the governors would develop a policy on controlling regional haze for the protection of visibility in the western United States where visibility is an important "treasure" and resource.